

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
21 October 2004 (21.10.2004)

PCT

(10) International Publication Number
WO 2004/089179 A2

(51) International Patent Classification⁷: **A47L 11/34, 13/26**

(21) International Application Number:
PCT/US2004/009927

(22) International Filing Date: 31 March 2004 (31.03.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/320,071 31 March 2003 (31.03.2003) US

(71) Applicant (*for all designated States except US*): **BISSELL HOMECARE, INC. [US/US]; 2345 Walker N.W., Grand Rapids, MI 49544-2516 (US)**.

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **MINER, Jonathan**

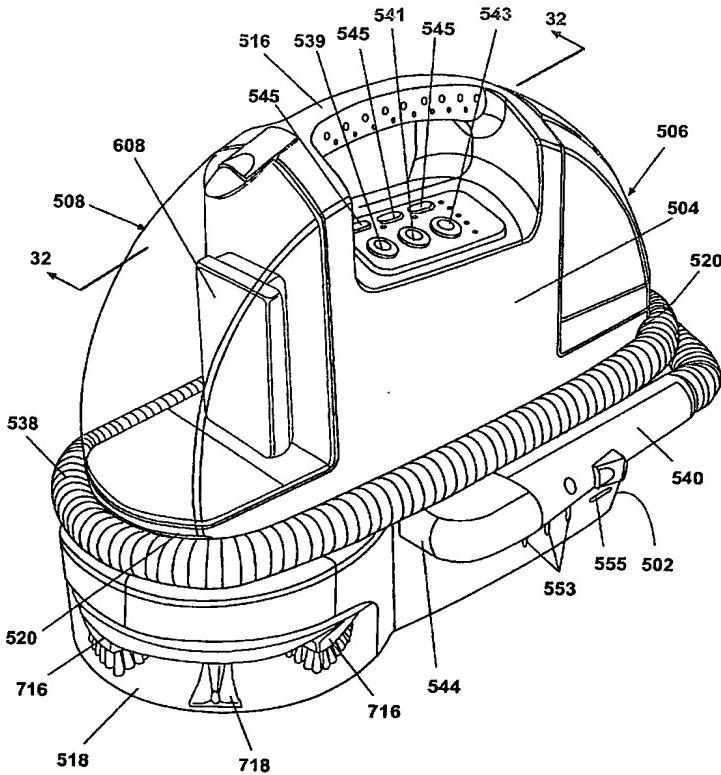
L. [US/US]; 50 S. Lincoln Street, Rockford, MI 49341 (US). **HUFFMAN, Eric C.** [US/US]; 995 Flat River Drive, Lowell, MI 49331 (US). **SUGALSKI, Eric C.** [US/US]; 801 S. Wells Street, #1009, Chicago, IL 60607 (US). **SLAVEN, Mark P.** [US/US]; 55 Salem Lane, Evanston, IL 60203 (US). **MATUSAITIS, Tomas A.** [US/US]; 3041 W. Eastwood, Eastwood, IL 60625 (US). **KOPLIN, Randall S.** [US/US]; 3414 N. Bosworth, Chicago, IL 60657 (US). **CONDON, Jeff R.** [US/US]; 4427 N. Greenview, Chicago, IL 60640 (US). **SEAL, David** [US/US]; 3829 1/2 N. Fremont #3W, Chicago, IL 60613 (US). **TRAN, Phong Hoang** [US/US]; 1519 Crystalline Dr., Caledonia, MI 49316 (US). **EHRENREICH, Kevin** [US/US]; 1251 W. Grace, Chicago, IL 60613 (US).

(74) Agent: **MCGARRY, John E.**; 171 Monroe Avenue, N.W., Suite 600, Grand Rapids, MI 49503 (US).

(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM,

[Continued on next page]

(54) Title: UNATTENDED SPOT CLEANING APPARATUS



(57) Abstract: A spot cleaning apparatus comprises a housing, a fluid distribution system, a fluid recovery system, an agitation system, and a controller system to automatically monitor and control inputs and outputs to said systems for removal of spots and stains from a surface without attendance by a user. A suction nozzle and agitation device are mounted to the housing for movement over the surface to be cleaned relative to a stationary housing. Optionally, the spot cleaning apparatus can be operated in a manual mode.



AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished upon receipt of that report

- (84) **Designated States (unless otherwise indicated, for every kind of regional protection available):** ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.